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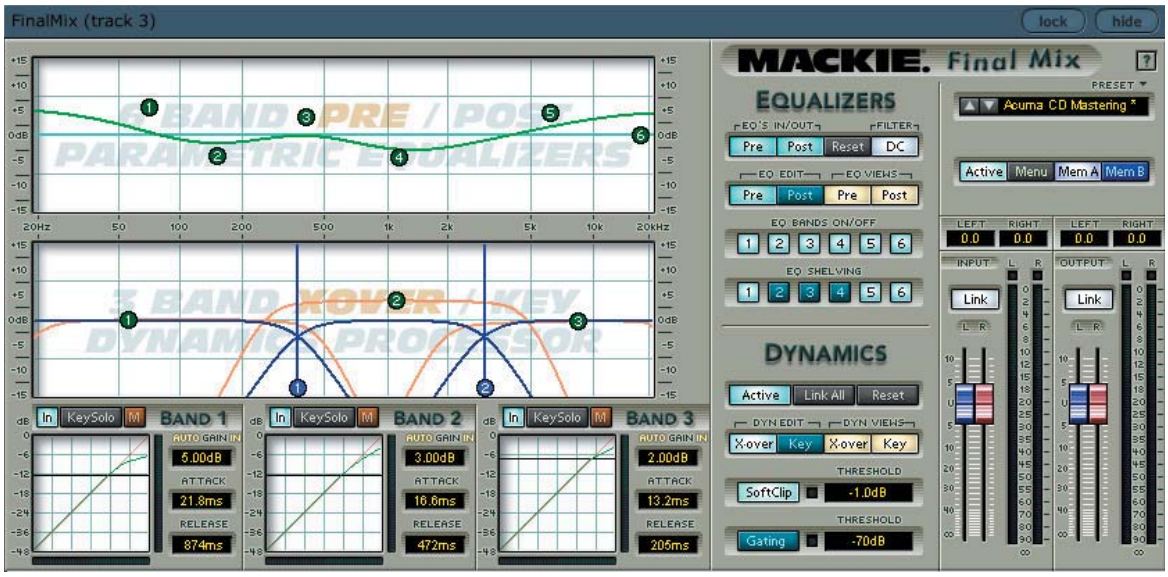
USER'S GUIDE



Final Mix™ plug-in

For Tracktion 2

MACKIE.

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Iconography

This icon will lead you to some further explanations of features and practical tips.

This icon marks information that is very important, so please make sure you have a read.

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Introduction

Thank you for choosing Mackie software products for your computer-based audio recording system. This version of Mackie's Final Mix stereo mastering plug-in comes with Tracktion, our easy-to-use music production software application. When you install Tracktion, Final Mix is automatically installed in Tracktion's plug-ins folder.

Note: This version of Final Mix only works with Tracktion, and will not work with any other VST host applications you may have on your computer. You can visit our website (www.mackie.com) and purchase the universal version of Final Mix that works with any application that supports VST 2.0 (Virtual Studio Technology).

Final Mix is a professional stereo mastering plug-in that offers multi-band dynamics processing and equalization. It has three individual dynamics processors, each with its own set of controls and selectable crossover points. It also has two separate six-band parametric eqs, one located before the dynamics section, and the other after. Each dynamics band is typically used as a compressor, but expansion is also possible. An intuitive dynamics contour edit screen provides easy setup of your compressor parameters, and allows you to create the perfect soft knee curve. Final Mix also offers a simple-to-use noise gate and a soft-clip limiter. With intuitive screens and controls, Final Mix promises to be one of your most invaluable tools. It can take your projects to new heights.

About Final Mix

Mastering is often the element that separates a good production from a great one. Mackie's Final Mix enables you to master your session within your computer's software application and print directly to hard disk. All this without having to rely on expensive mastering houses or outboard gear. Best of all, settings can be saved as part of your DAW session!

Final Mix features a six-band parametric (pre-dynamics) equalizer, a multi-band dynamics processor, and a six-band parametric (post-dynamics) equalizer—12 bands of stereo EQ and three bands of dynamics processing in all. All settings are easily edited to create perfect EQ curves and compression settings. All three dynamics bands feature individual threshold, attack, and release times. A graphical contour edit screen for each dynamics band allows you to easily set a desired ratio. Then you can create your own hard knee or soft knee, or even create an expander curve.

Each dynamics band features its own key filter and operating bandwidth. This allows you to customize the frequency band triggering each compressor.

The Soft-Clip feature adds a smooth, analog-style clip response when your signal gets close to overload. These features and others, such as Noise Gate and Band Linking, ensure that Final Mix will be an integral part of your mixes from here out.

Main Features

- Stereo mastering plug-in solution for Tracktion
- 6-band pre-dynamics parametric equalizer
- 3-band dynamics processor
- 6-band post-dynamics parametric equalizer
- Soft-Clip feature to provide peak overload protection
- DC removal filter
- Noise gate
- Integrated on-screen help (click on the question mark button)
- Dynamics auto make-up gain
- Individual key selector for each dynamics band
- Graphical user-definable dynamics band contours
- Linking of dynamics band edits
- Full stereo operation
- Fully automatable
- Global enable button
- On/Off for the dynamics section and each EQ
- Solo for each key filter to assist with dynamics setup
- Mute for each dynamics band to assist with crossover setup
- Separate dynamics and EQ reset buttons
- Integrated factory presets and user presets
- Memories A and B for quick comparisons
- Input, output, and gain reduction metering
- Full Mackie Control Universal parameter support

Adding Final Mix in Tracktion

The first thing to do is to open up Tracktion and open your project.

Tracktion uses the term “filter” to refer to a plug-in, be it native to Tracktion, or a 3rd party plug-in such as a VST plug-in.

To add the plug-in to your tracks, simply drag the icon labelled “new filter...” located just above the filter section, and drop it where you want the new filter to be placed. The figure below shows a filter being added to track one.

Top Right of Tracktion Screen

Notice that the area in front of the volume/pan filter is glowing red; this is how you can tell where the filter will be placed. If there is no illumination, then you are not currently over a valid target area.

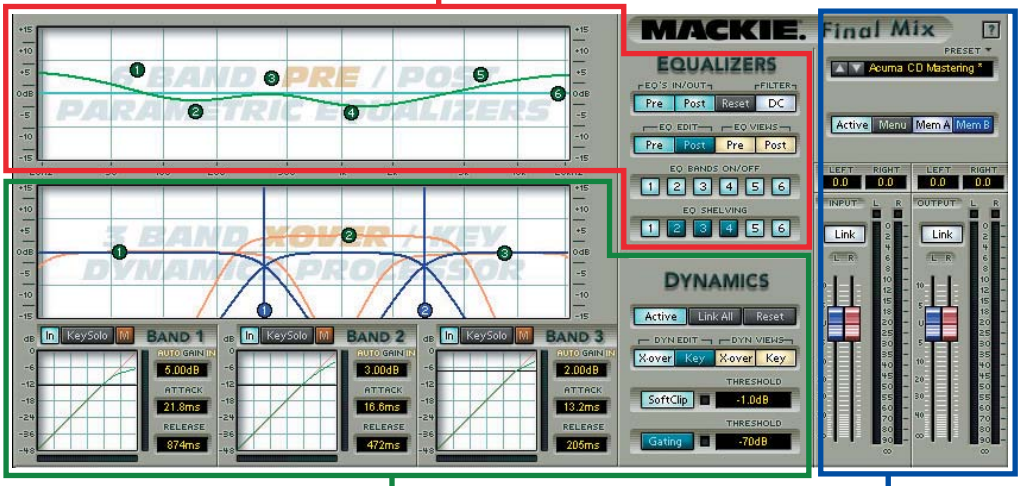
Once the “new filter” icon has been dropped, a list of available filters will appear, as if by magic. Choose the filter you wish to add to the track from this list. Final Mix and other exciting plug-ins are available in the "Mackie Plugins" folder of this drop down menu.

The filter order can be changed, and filters can even be moved onto a new track, by simply dragging the filter icons in the same way that you first added them.

Front Panel Overview

You can think of Final Mix as being broken into three basic blocks: EQ, Dynamics, and Global. The dynamics and equalizer blocks have alternate pop-up screens that can be accessed for detailed editing.

Pre/Post Parametric Equalizers (Six Band)



Dynamics Crossover and Key Filters

Global Controls

Parametric Equalizers

The parametric equalizer block contains two separate six-band parametric equalizers. One is pre-dynamics processing, and the other is post-dynamics. Each offers a visual representation of your EQ curve that can be viewed together or separately on one convenient screen. Each of the six EQ bands is represented by a colored node (ball). Each node has independent gain, frequency, Q, and filter type (shelf or bandpass) controls. Control-click sets a node to its default value. Right-clicking and dragging allows editing of the Q, rather than the gain and frequency. Double-clicking on the EQ screen background brings up the EQ Values Panel. This allows you to view and adjust the numeric values of each band independently.

Dynamics, Crossover and Key Filters

The crossover is used to split the signal into three individual bands, each of which is then sent to its own dynamics processor.

Each of the three dynamics bands has its own adjustable key filter. This can be used to emphasize or de-emphasize the compression within each band.

From the crossover/key setup screen you can drag nodes to adjust crossover points and key filter parameters.

Each band has an individual In/Out button to enable or disable dynamics processing for the band. Each band also has a mute button, which is useful for allowing you to listen to exactly what the crossover is doing. By muting all but one band at a time, you can solo the band. Similarly, each key filter has its own KEY SOLO button that lets you solo the key signals.

Double-clicking anywhere on the crossover screen opens another editing window. This window displays numeric values of the crossover frequencies, slopes, key gains, frequency centers, and bandwidths.

At the bottom of the dynamics block, there are three small windows. These show an overview of the dynamics contours, as well as the attacks, releases, and gains, of the three

dynamics bands. Double-clicking on any of the smaller contour screens brings up the corresponding larger screen for detailed editing of the contour. The contour allows you to control the threshold and ratio, as well as a desired knee. It is a view of the overall 'shape' or contour of exactly what the compressor is going to do to your signal. You can even draw in regions of expansion. From this screen you can also enable or disable the band's auto make-up gain. Band View displays the edit screen of a selected band along with numeric windows that display makeup gain, attack, and release values. For more information see the "Dynamics Processor" section on page 14.

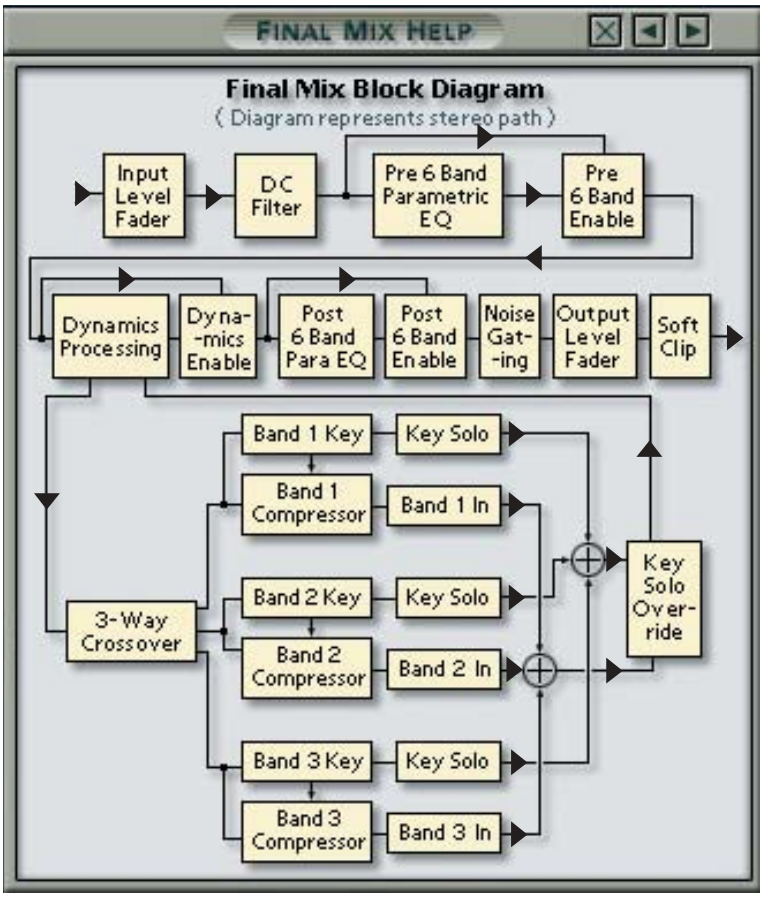
Global Controls Block

The global block contains all of Final Mix's global assignments. These assignments include Preset Toggle Control, Preset Title Window, Active, Menu, Mem A/B, and Fader Link. There are also Input and Output faders, and Meters.

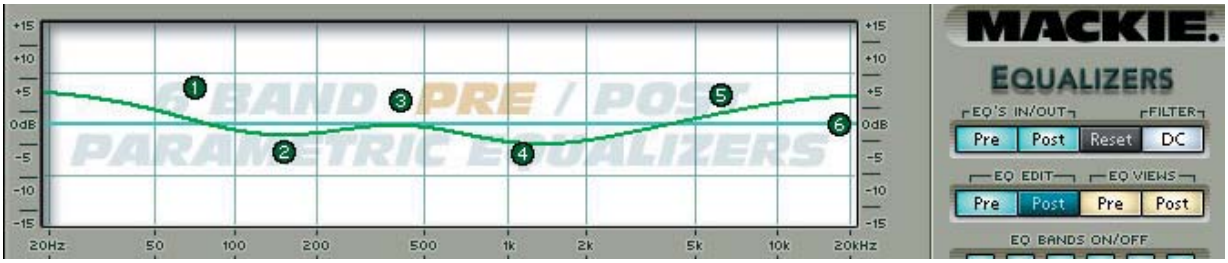
Block diagram and Help screens

Click on the question mark ? in the top right corner to bring up the signal path block diagram. This shows the goings-on within the plug-in, and takes the place of a thousand words. Or at least it would, but the thousand words protested, brought in their attorneys, and they are spelled out further on anyway. In the diagram below, little arrows have been added to show the direction of signal flow.

Clicking the arrow buttons in the top right will bring on a help screen, and a note about some of the factory presets.



Pre/Post Parametric EQ



Pre and Post Parametric Equalizer graphs

The main EQ graph allows you to display and edit both the Pre EQ and Post EQ. Pre EQ is applied to the signal before it reaches the dynamics processing section, and Post EQ is applied after the processing. (See the block diagram on the previous page.)

The EQ's IN/OUT buttons let you select which EQ is engaged (on) or bypassed (off). (You cannot edit or view when off.)

The EQ EDIT buttons allow you to select which EQ to edit, either Pre or Post. The letters Pre or Post will also be highlighted in the graph background screen, as a reminder of which EQ you are editing. (When Final Mix is initially activated, EQ EDIT PRE is on.)

The EQ VIEWS buttons let you select which EQ to view, either Pre, Post, or both at the same time.

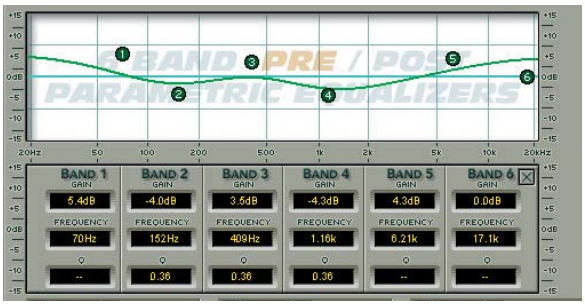
EQ Editing on the graph

Six nodes are displayed on the Pre or Post EQ curve currently selected for editing. Each node on a selected curve offers independent gain, frequency and Q control. To adjust EQ curves, simply drag individual nodes by grabbing a ball with your mouse as follows:

Frequency change:	Left-click and move left or right
Gain change:	Left-click and move up or down
Q change:	Right-click and move left or right
Set to default:	Control-click

EQ Values Panel

Double-clicking anywhere on the EQ screen background brings up the EQ Values panel.



EQ Values panel

This shows the gain, frequency and Q values corresponding to either the Pre or Post EQ. What is shown depends on which of these is selected for editing (by the EQ EDIT PRE/POST buttons). EQ bands can also be adjusted from this screen using the mouse to click on a readout and adjust the numeric values up or down.

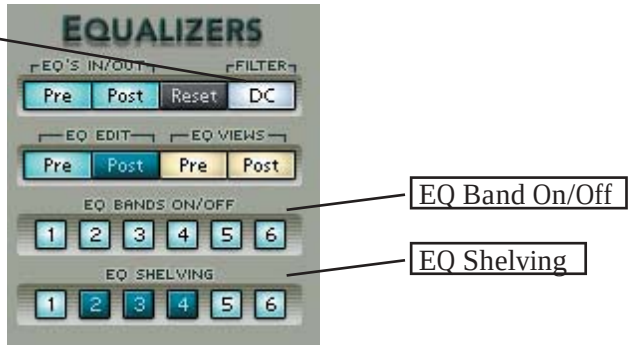
Fine adjustment is accomplished by clicking in the text boxes. A single right-click in the box increments the value, and single left-click in the box decrements the value.

Achieving the right amount of compression can change the EQ of a signal. For this reason, it's handy to have post-compression EQ. The changes that are made in the Post EQ can be used to rebalance the overall EQ of your mix.

If you find that the display is too hard to see, try turning off either the EQ PRE or POST VIEW button so that only one is lit. These are labeled as EQ VIEWS in the Equalizer status screen. This allows you to view one curve at a time.

If you have deactivated the dynamics section of Final Mix, the Pre and Post EQs essentially cascade together to give you a 12-band parametric EQ.

DC button



DC stands for Direct Current offset. This is a high-pass filter with a sharp slope that automatically removes DC offset noise that is unwanted when you are at the mastering stage. The default state is on when you activate Final Mix. If you don't have a need for this filter, simply click the button to disengage.

DC offset is noise that may be present within your signal, but typically is not audible by itself. Why would you want to remove it? It can damage speakers by offsetting the "resting" position of the cone. It can also require extra energy to reproduce, robbing an amplifier of power that could be used to reproduce the music.

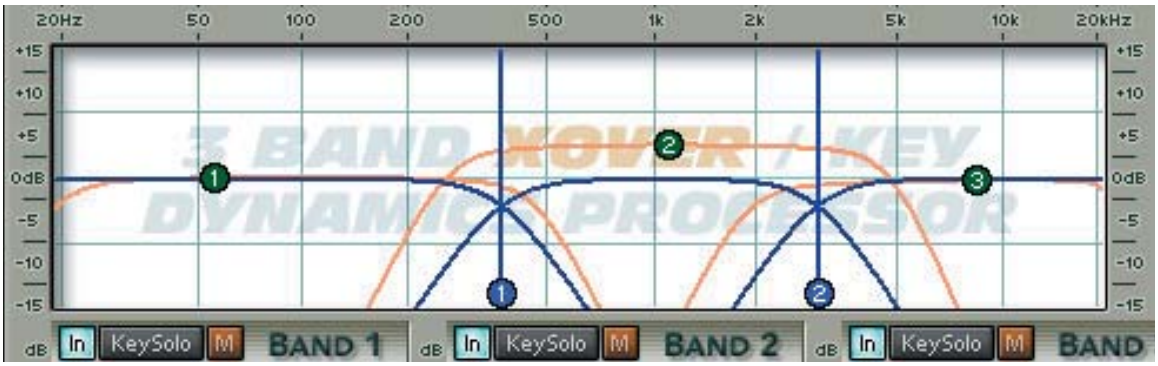
EQ Bands On/Off

The six EQ BANDS ON/OFF buttons correspond to the six nodes found on both the Pre and Post EQ screens. You can enable or disable each of the bands with either EQ EDIT PRE or POST selected by simply switching them on or off with your mouse.

EQ Shelving

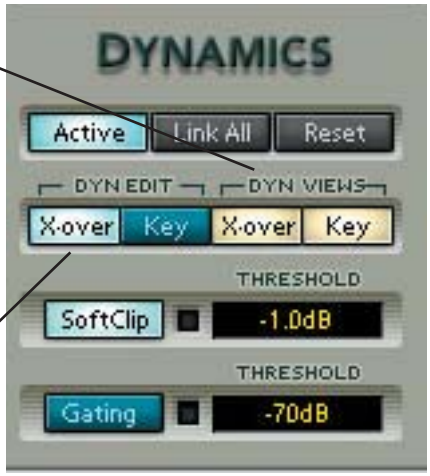
The six select buttons in the EQ SHELVING section correspond to the six nodes found on both the Pre and Post EQ screens. These buttons allow you to switch the band filter type from bandpass to high or low shelving. Bands 1, 2, and 3 are low shelving filters; and bands 4, 5, and 6 are high shelving filters. The EQ SHELVING buttons work in either the Pre or Post EQ edit screen depending on which EQ is active. Final Mix defaults to one low-pass shelf on (number 1), and one high-pass shelf on (number 6). Switching the EQ SHELVING button off means that the band becomes fully parametric.

Crossover and Key Filter



Crossover and Key Filter graph (with Crossover ready for editing)

The graph illustrates the Crossover and Key Filter settings. As with the Pre and Post EQ graph, parameters and views of this screen are controlled using four buttons to the right of the graph. These are: DYN EDIT and DYN VIEWS.



DYN VIEWS enables or disables viewing of either the Crossover or the Key Filters.

DYN EDIT selects which of these can be edited. The function not being edited is dimmed.

Crossover

The purpose of the crossover is to split your incoming signal into three different frequency bands (Low, Mid, and High). Each of these bands feeds into its own dynamics processor.

The crossover points are represented by two blue nodes at the bottom of the Crossover screen. These can be adjusted by dragging the nodes. The slope of the crossovers determines how sharply the adjacent bands are separated. The crossover slope can be adjusted by right-clicking on these crossover nodes and moving the mouse vertically.

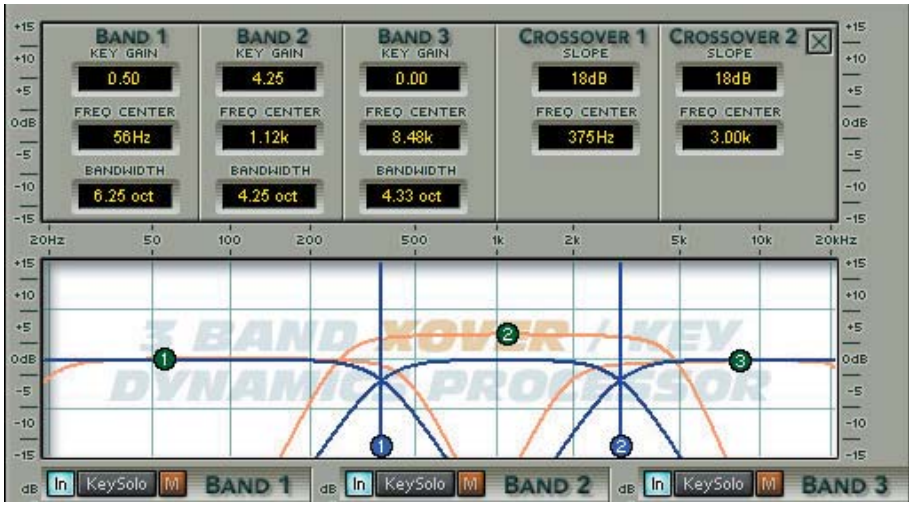
Key Filter

Each dynamics processor has its own key filter. This can be used to emphasize or de-emphasize the key (or control) signal within a band. The key signal is used to trigger the associated dynamics processor. Having separate control of the key filter is one of the most unique features of Final Mix. This allows you to control the dynamics of one frequency band by keying off another. This can be useful, for example, if you would like the low frequencies not to overpower your lead vocals.

Below the graph, there are three sets of three buttons labeled IN, KEY SOLO, and M (for mute). These are very handy for helping you to set up your crossover and key filters. Mute will mute the crossover band. By muting all but one band at a time, you can listen to exactly what part of your mix is going into each band. Similarly, KEY SOLO acts as an override, allowing you to listen to just the key signal of each band. The IN button switches dynamics processing on and off for the band. This allows you to hear exactly what is going on in each band.

Crossover/Key Filter Values Panel

Double-clicking on the Crossover graph brings up a screen which displays all of the parameters for the crossover and key filters.



Crossover/Key Values panel

All the values from this screen can be adjusted by clicking on the digits and dragging up or down. For fine adjustments, right-click in the text box to increment the value, and left-click to decrement the value.

Key Gain

The Key Gain Control ranges from –15 dB to +15 dB. This control is not the same as the compressor make-up gain, which is found in the contour screen (and beside the three small contour graphs). Instead, this control adjusts the gain of the signal that is sent to the key level detector. This is used in conjunction with the key bandwidth to determine when the dynamics processor acts on the signal. You can use this, for instance, to drive the control signal to the compressor a little harder. This results in the signal becoming more compressed. It is also useful if you notice that the compressor input signal is very low, and you want to key off of a more moderate level. The compressor input signal is indicated by the horizontal meter below the compressor contour graphs.

Note: The compressor input signal level is not the key level.

Frequency Center and Bandwidth

Each key has its own adjustable frequency center and bandwidth controls. These controls can be used together to zero in on a specific portion of the signal. Bandwidth, the inverse of Q, is measured in octaves and ranges from 0.0 to 10.0 octaves. You can use the KEY SOLO buttons, located directly below the Crossover/Key graph, to listen to the key signal of each band.

These controls give you further choices concerning what the compressor does with the band. For instance, let's say you've set up the low band (Band 1) of your compressor so it contains mostly the bass guitar and kick drum. If you want to compress more of the bass than the kick drum, you can use the low band's key filter to hone in on the frequency range of your bass guitar. Then more of the bass is sent to the compressor key than the drum. The result is that the bass tends to cause the compressor to engage more than the drums.

You can also set the mid-band Key filter to a narrow width and adjust the frequency until you locate problem Sssss sounds. This will make a De-Esser, to remove any sibilance in vocals.

Dynamics Processor

Final Mix's crossover splits the signal into three bands, each of which is fed into its own independent dynamics processor. Typically, the dynamics processor is used as a compressor. However, depending on the settings it can act as a compressor, limiter, or expander, or even a combination of all three.

Having a separate dynamic processor for each band can give you great flexibility while mastering. For instance, you don't have to worry about your bass causing your lead vocal to get compressed. All bands can be compressed individually, resulting in a tighter, punchier overall sound.

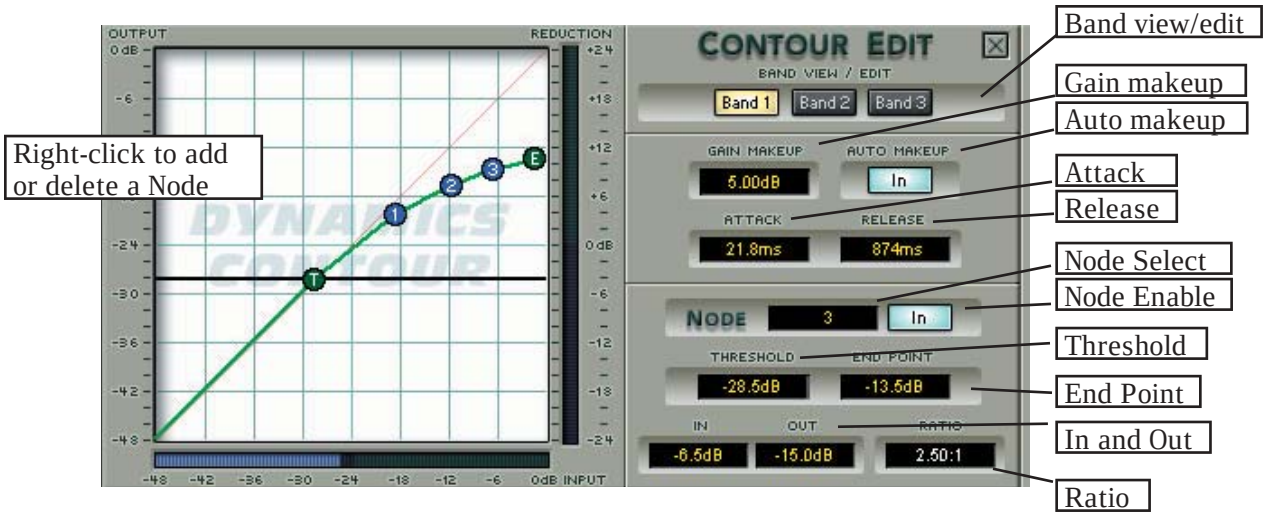
Dynamics Processors (one for each frequency band)

The three windows offer an overview of the dynamics settings for each of Final Mix's three bands. The graph is the dynamics contour, showing the band input level (on the horizontal) vs. what the output level will be (on the vertical) after passing through the dynamics processor. The black horizontal line is the threshold. Below this value, the signal is unaffected. Beside the graph are readouts and controls for the band make-up gain, attack time, and release time.

On these small graphs, you can left-click and drag to adjust the Threshold node. Right-click and drag to adjust the End node.

Double-clicking on any of the smaller contour screens brings up the larger Contour Edit Screen for detailed editing. Once the larger screen has been accessed, contour values can be edited by dragging and dropping nodes. (See next page.)

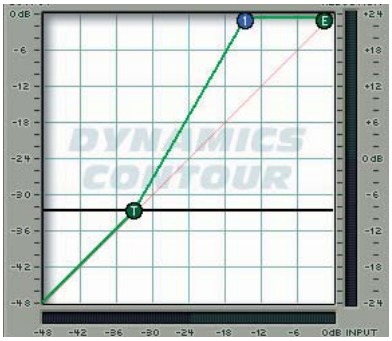
Contour Edit Screen



The Contour Edit Screen allows you to have very powerful control over the heart of Final Mix. Double-clicking on any of the three dynamics overview screens brings up this more detailed screen. The graph you see when first accessing this screen represents the dynamics contour for the currently selected band. This graph shows the band input level (on the horizontal) vs. what the output level will be (on the vertical) after passing through the dynamics processor.

The threshold is shown as the black horizontal line with the “T” node attached. The graph also shows the contour’s moveable end point (the node labeled “E”). The end point represents a selected band’s maximum output level. The traditional Compression Ratio is affected by both of these parameters. One of the very powerful features of Final Mix is that you can set up your contour to have different compression ratios for different input levels. This is achieved by using multiple nodes. The figure above shows 3 extra nodes – the blue balls labeled 1, 2, and 3. These nodes are being used, in this case, to essentially draw a knee for the compressor curve. This gives a nice smooth transition from applying minimal compression at low input levels, to much higher compression at higher levels.

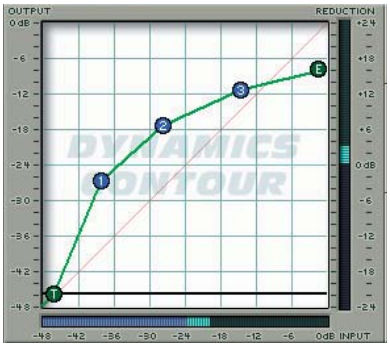
The thin red diagonal line represents unity gain (i.e., the signal is unaffected by the dynamics processor). Contours which are steeper than this, as illustrated below by the segment between T and 1, represent expansion, those below it represent compression.



Expansion section

Expansion occurs when the amplitude of the output increases faster than the amplitude of the input. Compression, on the other hand, occurs when the amplitude of the output increases slower than the amplitude of the input. Final Mix allows expansion or compression above the threshold. Expansion can be used to increase the volume of quiet passages and bring a little bit more "life" into a performance. Note that each individual segment can be set as either a compressor, an expander, or both. Having expansion for low input signals and compression for higher signals is a good way to level out a signal's dynamics. Quiet signals become louder,

and louder signals become quieter. We see an example of this below. For input signals below node 2 in amplitude (approximately –28 dB), the dynamics processor acts as an expander. For signals above node 3, the processor is a compressor. See the "Node Editing" section on the next page to find out more about how to set up these kinds of contours.



Expansion and compression together to "level" a signal

Band View/Edit

One dynamics band can be edited at a time from the contour screen. However, individual bands can be quickly accessed by choosing a band from the BAND VIEW/EDIT buttons.

Note: If you press the 'LINK ALL' button, located in the DYNAMICS section, all three bands are affected at once by any future edits.

Gain Makeup and Auto Makeup

Gain Makeup is used to make up for volume that has been decreased due to compression. The Gain Makeup window ranges from –15 dB to +15 dB and can be adjusted with a mouse to scroll the values up or down. This control can also be accessed from the window labeled as GAIN found in the Dynamics overview. You can also apply attenuation using this control. This is represented by a negative value (i.e., –3.0 dB).

When the AUTO MAKEUP button is in, Final Mix automatically chooses an appropriate makeup gain for you. This makeup gain is based on your dynamics contour. You can still use the 'manual' gain makeup control in this case. It merely adds to the makeup gain automatically applied. When you first push the AUTO MAKEUP button in, Final Mix adjusts your makeup gain parameter so that the volume does not suddenly jump up. This is hearing (and speaker) protection!

Attack and Release

The Attack parameter specifies how quickly gain reduction (or expansion) occurs at the attack, or beginning, of a signal. Release controls how quickly gain reduction backs off when the signal drops back down. The time is measured in milliseconds and corresponds to the length of time it takes to achieve a fixed amount of compression (or expansion).

In general, the attack time should be much faster than the release time to get pleasing results. If the attack time is set too quickly, you hear something resembling clipping on attacks, especially with low-frequency signals. Leaving the attack a little bit longer also allows more of the 'snap' of the attacks to pass through the compressor. Setting a release time too fast can result in 'buzzing', especially on low notes. This occurs because the compressor gain is actually following individual cycles of the incoming waveform.

If you set the attack time to 0 ms, the dynamics section actually behaves as a limiter. It won't permit the signal to go over the end point value.

As a general rule of thumb, lower frequencies require longer release times than higher frequencies. If a high- or mid-frequency band has a release time that is too long, you hear the compressor 'breathing'.

Threshold

Threshold sets the point at which compression (or expansion) starts to occur. Final Mix's threshold is displayed as the black line in the middle of the graph with the green "T" node attached. You can adjust the threshold using your mouse to drag the line up or down. The threshold level ranges from –48 dBfs to 0.0 dBfs. The Threshold can also be adjusted in the Threshold window—use your mouse to scroll the values up or down.

Node Editing

Final Mix's Node Editing is a unique and powerful feature that goes far beyond the usual concept of assigning a dynamics band's ratio. The Contour Edit screen allows you to draw your own curve between the threshold and the end point. Up to four nodes can be added to the curve. This depth of editing is helpful in defining detailed nuances in your curve such as hard knee, soft knee, and expansion.

Nodes can be added to the contour graph by right-clicking the mouse on the contour graph. Right-clicking on the graph where there is no node adds a node, up to a maximum of 4. Right-clicking on a node removes it. You can also add or remove nodes by scrolling through the NODE selector window and toggling the Node Enable IN button.

Note: The four numbered nodes always appear in order from left to right. A consequence of this is that you can't add a node between, for instance, nodes 1 and 2, even if they are the only 2 nodes active.

IN and OUT

Nodes on the graph can be adjusted by the standard click and drag method. You can also edit the node's In and Out dB levels in the small windows at the bottom of the contour edit screen.

Ratio

The ratio is the change in input level (dB) over the change in output level, for a selected node. It is automatically calculated when the node is moved, and the value can't be directly edited.

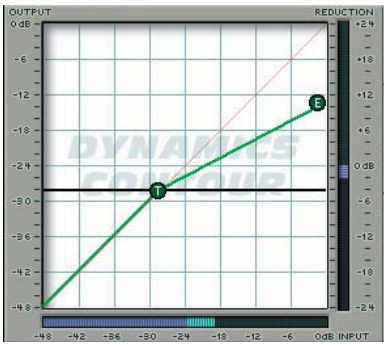
The RATIO display corresponds to the dynamics ratio applied in the graph's line segment segment immediately to the left of the selected node.

The RATIO window displays both compression and expansion. When a segment represents expansion, the ratio is displayed as, for instance, 1:2.5. However, a compression ratio shows as 2.5:1.

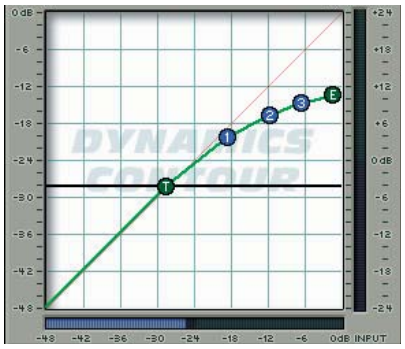
Final Mix also implements negative compression ratios. This is useful mainly for special effects or repair work. In this case a node appears lower in the graph than the one to its immediate left. For negative compression, the ratio window displays, for instance, –2.5:1.

About Hard Knee and Soft Knee Compression

The last page showed an example of expansion combined with compression to implement a leveling of the signal. This is where the quiet sections become louder and louder sections become quieter. Below we see hard and soft knees drawn in.



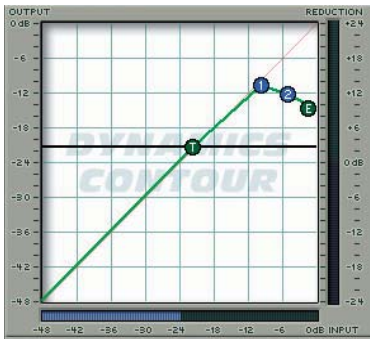
Hard Knee curve example



Soft Knee curve example

The terms hard and soft do not refer to sound, but rather the way that the compressor reacts to incoming signals. The difference is somewhat subtle to hear, but is more apparent at higher compression ratios. A hard knee setting is well suited to lower ratios. When using higher compression ratios, you may find it a little better-sounding to draw in a smoother knee curve. Look at the graphs above. A hard knee curve is represented as a straight line that connects a point on the threshold to the end point

or maximum output on the graph. A soft knee curve has a smoother curve that connects the two points. This creates a more gradual transition between non-compressed and compressed signals.



Snare track example

The graph above could be used on a snare track to drastically lower the volume of a few snare hits by an over-excited drummer, while leaving most of the snare track unaffected.

Dynamics Section

Active

This engages or disengages all of the compressors.

Note: The dynamics processor for each band can be individually enabled or disabled using the IN button immediately below the key/crossover graph.

Reset

This will reset the Dynamics section to its factory default settings.

Link All

When engaged, this button allows you to edit all three bands of dynamics at once. Changes don't take place until you move a parameter within the dynamics section.

Soft-Clip On and Threshold

The SOFT CLIP button activates a soft-clip limiter circuit. There is also a THRESHOLD adjustment. When the output of the dynamics section goes above this threshold, the soft-clip circuit kicks in. This circuit starts adding analog-style distortion. This avoids the harsher sound of a straight digital clip. The lower the threshold, the more analog-style distortion is added. If the threshold is set too low, you hear this as a very crunchy distortion sound. It is best to keep the threshold between –3 dB and –1 dB unless you are going for a special sound effect.

The soft-clip circuit has an indicator light, located between the SOFT CLIP button and the THRESHOLD adjustment. This activates when the signal is above the soft-clip threshold.

The soft-clip circuit is the last thing in the signal processing chain. If you notice it become active and wish to avoid any kind of distortion being added, back off the output faders.

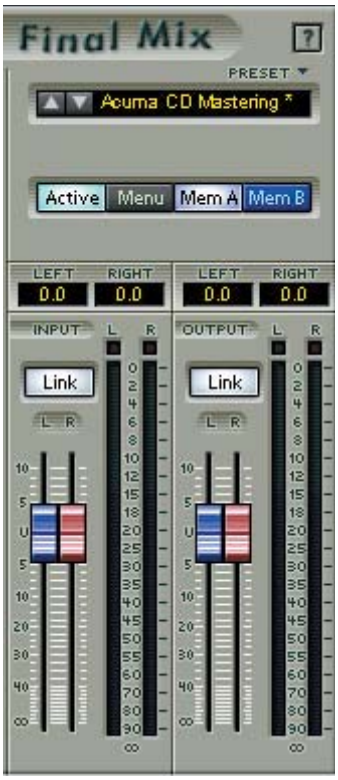
Noise Gate and Threshold

Final Mix also has a simple noise gate with a threshold adjustment. The noise gate threshold can go from 0 dBfs to –125 dBfs. The attack rate (when the gate opens) is very fast. The release rate is very slow. This can be used as an effect to generate a very slow, smooth fade out of a song. To do this, set the threshold at 0 dB with the noise gate disabled. When you want to start the fade out, enable the noise gate and the fade out starts. The fade out lasts about 5 seconds.

The noise gate is located post-dynamics but pre-output fader. That is, adjustments made in the output fader do not affect the performance of the noise gate.

Global Controls Block

Help Screen (?)



This button brings up a handy quick reference screen to assist you in using Final Mix. It offers a signal path block diagram, definitions, and editing tips. Toggle the arrows to change screens. Click the "X" to close the help screen.

Preset Toggle Buttons

The arrow buttons to the left of the window, enable you to scroll up or down through either the factory or user presets.

Preset Title Window

This window displays the currently selected preset. This window is located at the top of the control bar. Click on it to access the pull-down menu where you can choose between factory or user presets. An asterisk appears next to the preset name if you change a control or setting after loading a preset

Memory A/Memory B

The Mem A and Mem B buttons temporarily store Final Mix settings to allow comparative referencing. You can also copy and paste settings from one memory location to another using commands found on the menu.

Menu

Pressing the MENU button opens a pull-down menu that performs familiar functions:

About Final Mix: Opens a window that shows the version number and copyright information.
Undo: Undo the previous action.
Redo: Redo the previous undo.
Load Final Mix: Loads a previously saved preset file.
Save User Preset As...: Saves a Preset to the hard drive with a new file name.
Save User Preset: Saves changes to the current preset to the hard drive.
Reset Final Mix: Resets all the settings in Final Mix to the current preset values.
Cut Final Mix: Copies all the settings to the clipboard and resets them to their default values.
Copy: Copies all the settings to the clipboard, leaving the settings as they are.
Paste Final Mix: Copies the settings from the clipboard to the current Final Mix window.

Note: Cut/Copy/Paste are useful for changing Mem A and B to identical settings.

L/R Input and Output Clip LEDs

The two small boxes at the top of the input and output meters are the clip LEDs. The clip LEDs light if the signal goes above 0 dB. Avoid lighting the Output clip LEDs. When rendering to disk at either 24-bit or 16-bit, any clips will be written to the file.

You can generally get rid of clipping by backing off the input or output faders slightly, or by engaging the Soft Clip button (see page 18). Actually, because Final Mix uses 32-bit floating point internal processing, the signal does not clip internally within the plug-in. However, to maintain a reasonable gain structure and avoid clipping elsewhere in the signal chain, avoid running the signal up above 0 dB.

Link

These buttons link the Left and Right input faders or the Left and Right output faders so they can be moved simultaneously. If the faders have an offset when link is engaged, they maintain that offset.

Specifications

6 band Parametric EQ

Gain	± 15.0 dB
Frequency	20 Hz to 20 kHz
Q range	0.1 to 16
Filter type	High/Low shelf or bandpass

Dynamics

Gain Makeup	± 15 dB
Attack	0 to 100 ms
Release	30 ms to 3000 ms
Threshold	–48 dBfs to 0 dBfs

Compressor Contours

Four nodes per dynamics band, each allowing for any possible compression or expansion ratio	from 1:inf to inf:1

Input/ Output Meters

–90 dBfs to 0 dBfs

Routing

Pre or post insert, auxiliary, master L/R.

Soft-Clip

Threshold	0.0 dB to –20.0 dB

Input/ Output Faders

+ 10 dB to off

Noise Gate Threshold

0 dB FS to –125 dB FS

Crossover Frequencies

20 Hz to 20 kHz

Crossover Slopes

6 dB/octave to 36 dB/octave

Key Filters

Frequency	Limited to crossover band
Slope	4^{th} order low pass 4^{th} order high pass

DC Filter

On/Off, frequency = 3.3 Hz

Need Help?

Contact our Technical Support staff at **1-800-898-3211**, Monday to Friday, from 7 am to 5 pm PST. After hours, please visit www.mackie.com and look under **Support**, or email us at techmail@mackie.com.

Final Mix Factory Presets

The following table is a simple guide to help you understand some of Final Mix's factory presets. Final Mix presets can be used effectively as they are, or as a starting point that lets you do the fine tuning mix. Final Mix also lets you create your own user presets with custom parameters that meet your specific needs. So get creative and have fun! Please visit www.mackie.com periodically to download new audio examples and additional free presets.

Final Mix Preset	Preset Description	Preset Type
Acuma CD Mastering	A great full range compression preset for all-around mastering	Any style mastering
Acuma Dance Mix	Optimized dance mix guaranteed to keep the beat pumping	Dance production mix
Acuma Final Mix	Finely detailed midrange, great for any style	All around mastering
Acuma Gentle Comp	Soft and gentle compression levels for a light but definitive mix	Easy mix
Acuma Punch	Medium compression emphasizing low and high end compression	Funky, punchy mix
Acuma Rock + EQ	Great all-around rock compression with a boost in the low, mid and hi EQ	Rock and roll mix
Acuma Techno	EQ with the perfect fat bottom mix and a sizzling, crisp top end. Perfect for techo, house and groove.	Techno, trance, house, groove mix
Acuma The Leveler	Maximizes your output level with a very warm analog sound	Hot output mix
Country + EQ	Just the right compression and EQ creates a lively modern country mix	Country mix
Country Female	Especially designed for today's top country music female singing sound	Female country mix Country Mix
Female Broadcast	Optimized Female compression settings for radio or TV broadcast. Uses an EQ lift between 100 and 300Hz with a 75Hz roll off. This simulates Electro Voice RE-20 microphone response.	Radio and television broadcast (female)
Female Vox Comp	Good all around compression and EQ. Good for most female singing voices	Good over all female vocal mix
Final Mix Vocal	Medium compression set to optimal vocal crossover points 500Hz to 2.5K	Use with any vocal style
General CD Mastering	General purpose, all around mastering	General all around mastering
H_+6 dB Gain	A 6 dB lift created by a +3 dB input gain and a +3 dB output gain. Linked contour bands are set to 1:1 so they don't introduce any compression	+6 dB boost
H_12 Band EQ	Shows off overlapping the 6 bands of pre and post EQ's to form a 12-band parametric EQ	Demonstrates how the pre and post EQs can be combined to create a 12-band EQ
H_Bass Comp-Treble Exp	Pre EQ, high shelf; post EQ, low shelf. The contours are set to add compression to the lows, and expansion to the highs	Compress bass, expand treble

Final Mix Preset	Preset Description	Preset Type
H_Jazz Mix	Uses 3-band pre EQ w/three bands of compression that are set as tighter bass, mids, and highs.	Contemporary jazz mastering
H_Leveler With EQ	Three bands of pre EQ with a shelf set on the highs. A pronounced key in the lows, and 6 dB of gain makeup. Comp bands are linked	Hot output + EQ mix
H_Loudness & Mild Comp	Mild loudness EQ curve set by post EQ peak in the lows, and a shelf in the highs. Linked comp bands with medium attack and slow release used for over-all compression	Hot output with mid boost
H_Loudness EQ	Smiley-face EQ to compensate for quiet levels	Hot output + EQ mix
H_Mid Lift	Simple wide Pre EQ midrange lift	Boosts midrange compression
H_Mild Expansion	Three contour bands are set to act as midrange expanders to add a bit more dynamics and liven up a performance	Expands midrange
H_Notch EQ	One pre EQ band set extremely low. Used to remove a problem frequency	Use to eliminate bad frequencies
H_One Comp Band	Uses the middle contour band as a single broadband compressor. The Xover has its borders at 20Hz and 20kHz with 36 dB slopes. The band two key is set to match the Xover	Used as one over all compressor
H_Punchy Kick	Knock you through the wall kick sound. Soft low band compression with 100Hz pre EQ lift	Rock steady bass drum mix
H_Smooth Highs	Heavy high end compression with a Post EQ high shelf lift	Emphasize high end
H_Telephone Comp	Special effect that simulates telephone reception. Shows off the concept of shutting bands off as effects	Telephone effect
H_The Leveler #2	Linked comp bands @ 1.79:1 ratios. A small post EQ high lift is added. Use the Thresh or Input Gain faders to add or remove compression. The Output faders are used to trim over all.	Good overall master output control
Heavy Vox + 10K Boost	Heavily compressed vocal setting and 10k boost with linking bands	Heavy vocal compression with 10k lift
Instrumental	Perfectly tweaked compression for any instrumental mix	All-around instrumental mix
Jazz Final Mix	The perfect mastering compliment to well recorded live jazz	All-around jazz mix
Light + EQ	Just a touch of compression with EQ for subtle mastering	Easy comp mastering +EQ
Light Vox Comp + EQ	Just a touch of light compression with optimized vocal cross overs	Light vocal compression with EQ
Long Distance	Hello out there, does anyone hear me? Spacey EQ and compression effect	Far away effect
Loudness	Gives you hotter output.	Hot output mastering
Male Broadcast	Optimized Male compression settings for radio or TV broadcast. Uses an EQ lift between 100 and 300Hz. Has a 75Hz roll off to simulate Electro Voice RE-20 microphone response.	Radio and television broadcast (male)
Male Vox Comp	Good all around compression and EQ. Good for most male singing voices	Good over all male vocal mix

Final Mix Preset	Preset Description	Preset Type
Moderate + Hi Low EQ	Moderate compression with high and low EQ boost	High and low EQ boost
Moderate + Mid EQ	Moderate compression with a bit of EQ boost for mid frequencies.	Mid EQ boost
Orchestral	Finely tuned light compression for full orchestra	All-around orchestra mix
Pop	Medium, non-intrusive compression	All-around pop mix
Pump DA Bass	Pumps up the low end for an ultra phatt sound	Fat bottom end
Punch	Medium compression emphasizing low and high end compression	Punchy R&B mix
Radio Punch Mix	Gives your mix added punch for radio or television. Designed for FM frequencies	Add punch for radio and television
Sell It!	In your face sound that can't be denied	Up front and noticeable
Smoothed Out 1	Top and bottom compression just offset from key centers	Lifts and tightens a lifeless mix, mild bottom and top end compression boosts
Smoothed Out 2	Variation of Smoothed out 1	
Smoothed Out 3	Variation of Smoothed out 1	
Squash It 1	Extreme compression. Reminiscent of the main mix compressor on an SSL when it's pushed hard into a Pultec EQ	Heavy compression
Squash It 2	Variation (extreme compression).Reminiscent of the main mix compressor on an SSL when it's pushed hard into a Pultec EQ	Heavy compression
Squawk Squash	Designed to crush heavy midrange (2-5k)	Mid killer
The Brass Balls	Medium to heavy compression with bass boost EQ	In your face, to the wall compression bass boost EQ.
Vocal	General purpose vocal mastering; less compression in the middle to preserve a singer's dynamics	Good on vocals
Roll your own presets		

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